

# APPENDICITIS IN THE AMERICAN NEGRO\*

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**I**N 1936 Maes<sup>12</sup> stated, "taking case for case (of appendicitis), the Negro, ill the same length of time as the white patient, tends to exhibit a severer and more advanced type of disease." At that time, since no adequate series of appendicitis regarding the Negro had

five-year periods to denote the progress that has been made at Freedmen's Hospital.

There were twenty-five deaths in 1,200 cases of acute appendicitis and associated lesions or a mortality rate of 2.08 per cent. For the years 1943 to 1948 the mortality rate for 655 cases was 1.07 per cent. Our lowest rate was in 1946 with no deaths. Only one death occurred in 163 cases in 1947, a mortality rate of 0.61 per cent. Jennings,<sup>10</sup> Rogers<sup>20</sup> and Slattery<sup>23</sup> reported mortality rates of 1.0, 3.06 and 5.1 per cent, respectively, in their series similar to those in Table II.

Over 70 per cent of our entire series presented a fairly typical "textbook" picture of appendicitis on entry to the hospital. In the cases with gangrenous appendicitis, chills were associated in 40 per cent.

TABLE I  
ALL CASES OF ACUTE APPENDICITIS

Group	Classification	1938-1943		1943-1948		1938-1948	
		No. Cases	Mortality (Per cent)	No. Cases	Mortality (Per cent)	No. Cases	Mortality (Per cent)
I	Uncomplicated	443	0.68	525	0.00	968	0.31
II	Complicated	102	14.71	130	5.47	232	9.5
	Totals	545	3.22	655	1.07	1,200	2.08

been published, it was decided to follow carefully appendicitis in the American Negro at Freedmen's Hospital for a ten-year period. This study covers the period from January 1, 1938, to December 20, 1948. In it are reviewed 1,200 cases of histologically proven appendicitis.

The purpose of this paper is to compare the results of this series with other series reported in the literature to ascertain, if possible, the role of race in appendicitis. The reports of Maes,<sup>12</sup> Tashire and Zinninger,<sup>25</sup> Giles,<sup>8</sup> and McCown<sup>13</sup> are reviewed specifically because their series analyze appendicitis in Negroes. During this period there have been over fifty different operating surgeons representing all levels of the house staff.

Our classification of appendicitis is based on the histologic diagnoses made by the Department of Pathology of the Howard University College of Medicine. The entire series has been divided into two main divisions, namely, Group I, uncomplicated appendicitis and Group II, complicated appendicitis, as listed in Table I in which the ten-year period is divided into two

## GROUP I—UNCOMPLICATED APPENDICITIS

The subdivisions of uncomplicated appendicitis are (1) acute catarrhal appendicitis, (2) subacute or internal appendicitis and (3) acute suppurative appendicitis with localizing peritonitis.

Acute catarrhal appendicitis includes almost one-quarter (23.6 per cent) of the total number. There was one death, a mortality rate of 0.35 per cent. During the last five years there were no deaths. Subacute or internal appendicitis contains 496 cases (41.4 per cent), with two deaths resulting in a mortality rate of 0.40 per cent. Both deaths occurred in the first five-year period.

In combining classifications I and 2, the series contains 779 cases, with three deaths or a mortality rate of 0.38 per cent for the ten-year period. During the last five years there were 431 cases, with no deaths. This series compares very well with those reported by others.<sup>1,14,22,25</sup>

Stafford,<sup>24</sup> Burke,<sup>5</sup> Rumbold,<sup>21</sup> Rogers<sup>20</sup> and Slattery<sup>23</sup> also presented series comparable to the latter.

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In acute suppurative appendicitis with localizing peritonitis there were 189 cases (15.7 per cent), with no deaths for the entire ten years.

#### GROUP II—COMPLICATED APPENDICITIS

The subdivisions of complicated appendicitis are (1) acute gangrenous appendicitis with

purative appendicitis with rupture and/or abscess the mortality rate, based on five deaths in this group of seventy-nine cases, was 6.33 per cent. Only one death occurred during the last five-year period, a mortality rate of 2.78 per cent.

In combining all cases with rupture and/or primary abscess, there were seven deaths in

TABLE II  
TOTAL MORTALITY RATES OF CASES OF ACUTE APPENDICITIS AND ASSOCIATED LESIONS REPORTED IN LITERATURE

Authors	Place	Period Studied	No. of Cases	Mortality (Per cent)
Hathaway and Watkins <sup>9</sup> .....	Cleveland Survey, O.	1930-1942	19,401	4.8
Aycock and Farris <sup>1</sup> .....	Baltimore City Hospitals, Md.	1935-1944	31,151	3.0
Mueller <sup>18</sup> .....	Roosevelt Hospital, N. Y.	1935-1944	1,481	1.6
Tashire and Zininger <sup>21</sup> .....	Cincinnati General Hospital, O.	1939-1943	936	3.3
Robbins <sup>16</sup> .....	U. S. Naval Hospital	1942-1945	2,404	0.24
Schullinger <sup>22</sup> .....	Presbyterian Hospital, N. Y.	1941-1946	1,142	1.37
Ford and Drew*.....	Freedmen's Hospital, Washington, D. C.	1938-1948	1,200	2.08
		1943-1948	655	1.07

\* Present series.

localizing peritonitis, (2) acute gangrenous appendicitis with rupture and/or abscess, (3) acute suppurative appendicitis with rupture and/or abscess and (4) acute appendicitis with generalized peritonitis.

Acute gangrenous appendicitis with localizing peritonitis includes sixty-six cases, of which there were three deaths or a mortality rate of 4.55 per cent. In the last five years there was one death in forty cases, a mortality rate of 2.5 per cent.

There were 255 cases of acute appendicitis with localizing peritonitis in the ten-year period with three deaths or a mortality rate of 1.18 per cent. For the last five-year period the mortality rate was 0.75 per cent in 134 cases. Other comparable series are reported in the literature.<sup>1,22</sup> Bohmannson,<sup>2</sup> Nassau,<sup>16</sup> Rumbold<sup>21</sup> and Slatery<sup>23</sup> reported mortality rates of 11, 3.5, 7.1, and 5.9 per cent, respectively, in their series of acute appendicitis with local peritonitis.

In acute gangrenous appendicitis with rupture and/or abscess there were fifty-one cases in this group or 4.2 per cent of the entire series, of which four died, a mortality rate of 7.84 per cent. Two of these deaths occurred in the thirty-three cases during the last five years, a mortality rate of 6.67 per cent. In acute sup-

purative appendicitis with rupture and/or abscess, a mortality rate of 6.0 per cent. Three of these deaths occurred in the last five years in the seventy-three cases, a mortality rate of 4.1 per cent. Other series of appendiceal abscess should be referred to for comparison.<sup>1,4,22,25</sup> Bryce,<sup>3</sup> Reid,<sup>18</sup> Stafford<sup>24</sup> and Rumbold<sup>21</sup> report mortality rates of 10.8, 10.0, 7.06 and 18.4 per cent respectively, in their series with abscess formation.

In acute appendicitis with generalized peritonitis, ten of the thirty-six patients in this group died.

This gives a mortality rate of 28.0 per cent. Progressive fibrinopurulent peritonitis was found in 75 per cent of the cases. During the past five years there were only three deaths in twenty-one cases, a mortality rate of 14.29 per cent, but there have been no deaths in the fifteen cases since June, 1944. In comparison, Schullinger<sup>22</sup> reported a mortality rate of 40.08 per cent in diffuse peritonitis, but 80.0 per cent in fifty-four cases of progressive fibrinopurulent type from 1941 to 1946.

In all of the cases in this category intravenous fluids were given preoperatively, including whole blood, to correct dehydration, electrolyte imbalance and shock. In addition,

antibiotics and sulfonamides were given when available as indicated.

The factors largely responsible for the decrease in the operative mortality of appendicitis seem to be earlier hospitalization, greater knowledge of electrolyte balance and avoidance of outmoded technics.

The use of cathartics, as in eight of the twenty-five cases in which the patients died, the type of appendicitis, age of the patient (eight of one series were over sixty) and delay of hospitalization are still factors which tend toward a higher mortality.

Maes<sup>12</sup> stated that while "the Negro furnished less than one-quarter of the 4,157 cases of acute appendicitis, they furnished more than one-third of the deaths, 13.4% to 6.18% for the whites." Tashire and Zinniger<sup>28</sup> noted in their series thirteen deaths in 244 cases (5.2 per cent) for Negroes and eighteen deaths in 692 cases (2.6 per cent) for white patients, with an over-all mortality of 3.3 per cent. They also noted that perforations were 11 per cent more common in the Negro. Their total number was over 25 per cent of the cases as compared to 13.6 per cent in the series in this study. McCown<sup>13</sup> reported a series of 108 consecutive cases of appendicitis in Negroes at Fort Livingston, Louisiana, without a single death. Giles<sup>8</sup> reported a similar series of 342 cases in the army at Fort Huachuca with no deaths, all were Negroes. These patients were for the most part young, able-bodied men. Lewis<sup>11</sup> in his book, "The Biology of the Negro," states, "Deaths from appendicitis according to most American statistics, appear to be higher in Negroes than in whites; among Native Africans, appendicitis is often believed not to occur. . . Pales<sup>17</sup> says the relative proportion of appendicitis in native Africans and whites is about 3 to 10. . . In South Africa, Erasmus<sup>7</sup> says that appendicitis is eight times more frequent in Europeans than in the Bantu although complications occur more often in the latter."

#### SUMMARY

An analysis of 1,200 cases of pathologically diagnosed appendicitis in the American Negro at Freedmen's hospital for a ten-year period has been presented.

The total mortality rate for all cases of appendicitis for the ten-year period is 2.08 per cent. During the second five-year period the

mortality rate was only 1.07 per cent in 655 cases.

There has been no mortality from uncomplicated appendicitis in the last five years in 525 cases, and a 0.31 per cent mortality for the entire ten years.

In complicated appendicitis the ten-year mortality rate for 232 cases is 9.5 per cent, which has been reduced to 5.4 per cent for 130 cases in the latter half of the period. Over one-third of the deaths were in the aged (over sixty years).

Our findings suggest that the mortality and the morbidity of appendicitis vary with the skill and care with which the patients are treated. Race, *per se*, seems to play little or no role. Time of diagnosis, type of appendicitis, preoperative delay and age of the patient do have very important roles in the final outcome.

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